

Teaching the Outstanding Medical Learner

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Medical students and residents are typically prescribed a standardized curriculum. Learners who have difficulty meeting requirements of this curriculum often require extra attention and an individualized program of remediation. Outstanding medical learners, on the other hand, are rarely given an individualized learning program, even if they can easily master the standardized curriculum. These learners are likely to belong to a group that educators call “gifted adults.” No literature on this group of medical learners currently exists, and no research has been conducted on them. This article is designed to begin a dialog on the best approach to educating outstanding medical learners using the framework of the gifted adult. Gifted adults possess a unique set of characteristics and have needs that set them apart from the majority of medical learners. There are also well-described pitfalls that these learners encounter. Gifted adults can best exercise their talents and maximize their potential when they receive an individualized educational approach that focuses on providing intellectual challenges with permission to explore interest areas. Research, publishing, teaching opportunities, and leadership roles are some examples of ways to challenge these learners. They should be strongly encouraged to extensively pursue individual interests. Effort should be made to ensure that these learners have contact with peers and mentors of equal intellectual abilities. Gifted adults who are not intellectually stimulated on a routine basis and are not able to interact with other talented individuals may get bored and frustrated with their education. Medical educators who understand the characteristics and drives of gifted adults will be better able to ensure that these learners are regularly challenged, with needed assistance to avoid common pitfalls.

(Fam Med 2006;38(10):731-5.)

Much has been written about “the troubled resident” and “the problem learner.” It is widely understood that struggling medical learners require individualized approaches to assure success. Learners on the opposite end of the spectrum—“gifted learners”—also have unique needs and will benefit from an individualized approach to maximize the benefit of their training.¹ The education literature has an extensive amount written on gifted children, some describing the experiences of these children as adults. Most of this literature has focused on the problems of gifted adults, while some has explored how to help them succeed as adults.^{2,3}

The term “gifted” refers to the top 3%–5% of individuals in the general population with respect to intellectual abilities. Gifted adults enter professional careers such as law and medicine⁴ at a disproportionate rate,

so at least 3%–5% of medical learners will be gifted adults. By their nature, gifted adults stand out in academic settings. It is therefore reasonable to assume that most outstanding medical learners are gifted adults.

Gifted Adults

The “Gifted”

When educators speak of “gifted” individuals, they refer to those who score in the top couple of percentiles on standardized intelligence (IQ) tests. Other criteria are also usually imposed, such as notable achievements at a young age or exceptional creativity.¹ Gifted individuals stand out in many ways other than simply having a high IQ.^{5,6} Gifted children are notable for the volume of information they can memorize, the speed with which they acquire new concepts, an insatiable curiosity, a keen intuition, and an ability to generate novel solutions and original ideas.^{3,5}

Although gifted children are often thought of as precocious, giftedness is not simply reaching mental milestones ahead of peers.¹ These traits continue into adulthood.⁷ If these individuals learn to harness their

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skills, they can achieve remarkable professional, personal, and social success. If they do not, these same traits can lead to trouble in adulthood, impede the individuals' ability to maximize their potential, and lead to dissatisfaction with their careers and lives.⁸⁻¹⁰

Despite similarities, gifted individuals vary widely. Streznewski describes three broad types of gifted individuals: strivers, superstars, and independents.⁵ Strivers are excellent test takers and tend to be highly focused on their careers. Strivers are the type of individuals given the moniker "gunner" in medical school. Superstars tend to have more diverse interests and seem to excel at everything they undertake. Superstars develop good interpersonal relationships and are well liked by their peers.

Independents, on the other hand, may present a problem for educators. Whereas superstars and strivers are easily recognized as outstanding learners, independents may go unrecognized or may actually be misclassified as difficult learners. They have little desire to please authority and little interest in impressing peers, supervisors, or teachers.^{3,11} Independents produce brilliant work when interested but may be viewed as not fully trying if they refuse to attend to tasks that don't excite them. In Langlois and Thach's¹² classification scheme, independents may be described as having a valuation problem since their values do not align with those expected by their education program. Tension can quickly escalate because value conflicts, perceived as attitude problems or manifested as behavioral problems, are particularly vexing for teachers.¹³ Such situations should prompt educators to address the professionalism of the learner involved.

Characteristics of Gifted Adults

The gifted tend to be introverts, strong willed, driven by individual interests, intuitive, and have a highly developed sense of morality. They have vivid imaginations, are highly creative, and produce innovative solutions to problems.⁷ Some gifted individuals have a few well-defined skills developed to an exceptional degree, while others seem to be talented in most measurable areas.¹⁰

Lovecky has described five traits of gifted adults that can potentially lead to conflict within their lives: divergency, excitability, sensitivity, perceptivity, and entelechy (Table 1).⁸ Each of these traits represents a strength as well as a potential hazard for them in their relationships with others. These also represent challenges for teachers of gifted learners.

General Approach to the Outstanding Medical Learner

Teaching outstanding learners is challenging and potentially intimidating. Table 2 summarizes some general approaches to teaching outstanding medical learners.

Some outstanding learners may not be aware that they are gifted.¹¹ The most gifted may actively downplay their abilities because they are uncomfortable with them.^{3,14} By learning more about the typical traits and challenges of the gifted, they may become more at ease with themselves.^{10,11,15} Gifted learners should be encouraged to pursue personal interests and assured that their efforts are met with approval.

If a teacher feels threatened by the abilities of the learner, an adversarial relationship may develop. Acknowledging the learner's talents openly and establishing that the teacher will still be able to provide education makes both feel respected, which allows positive education to proceed.^{5,16}

Finding challenges for the outstanding medical learner is important.⁵ When a learner is truly gifted, it may be easy for educators to stop teaching.¹⁴ It may be difficult to search for additional knowledge to impart or for an alternative concept to consider. Just as trying to teach "down" to the level of the struggling student is mentally draining, trying to teach "up" to the outstanding student can be similarly mentally exhausting.

Table 1

Five Traits of Gifted Adults, as Described by Lovecky,⁸ That Lead to Conflict in Their Lives and Difficulties in the Educational Process

- **Divergency**—The gifted have a unique way of looking at problems or relationships. Others may find it difficult to follow their vision and may view the gifted individual as quirky or difficult to work with.⁸ Educators may view this as active resistance to their teaching. This could lead teachers to feel the learner has not understood a concept that the gifted learner has understood perfectly well but from a different vantage point.
 - **Excitability**—The gifted quickly become immersed in a project and may work tirelessly when they find an intellectual challenge. The gifted can have a level of hyperactivity that others find fatiguing.¹⁸ Gifted individuals may pour a remarkable amount of energy into a new project only to lose interest once their curiosity has been satisfied.³ This can lead to a string of partially finished projects and may leave teachers feeling frustrated by a lack of follow-through.⁸
 - **Sensitivity**—Gifted adults tend to be very sensitive and develop deep passions about issues they are interested in. However, they may be intolerant of the desires and needs of others with differing priorities.⁸ This can lead to the gifted being seen as rigid in their thinking.^{3,5} The gifted also tend to react to their environment more emotionally than others. This level of sensitivity and conviction may make giving negative feedback difficult, especially if the learner has rarely had such feedback.¹⁵
 - **Perceptivity**—Gifted adults tend to perceive several layers of a situation simultaneously, which can be useful for a physician. This makes complex tasks appear to be easy for the gifted and can be intimidating for others without such ability. The gifted often learn to suppress this ability so they don't stand out so much.⁸
 - **Entelechy**—Entelechy refers to a powerful drive to achieve self-actualization, which pushes the gifted to follow their own path in life.⁶ This can lead to conflict if the requirements of medical education interfere with the need of the gifted learner to self-actualize.
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Table 2

General Approaches to Teaching Outstanding Medical Learners

Acknowledge the learner as outstanding
<ul style="list-style-type: none"> • Acknowledge their potential for high achievement • Encourage them to learn about the characteristics of gifted adults • Give permission to strive to achieve their full potential
Challenge the learner
<ul style="list-style-type: none"> • Resist the urge to praise rather than teach • Encourage the learner to explore complex questions more fully
Take a collaborative teaching approach
<ul style="list-style-type: none"> • Admit when you don't know an answer • Role model lifelong learning skills by finding answers together
Determine what interests the learner
<ul style="list-style-type: none"> • Encourage exploration off the main path of learning • Insist that the prescribed curriculum is also covered thoroughly

If an outstanding learner is continuously given only positive feedback, boredom may soon set in. Some gifted adults go through several careers during their lifetime because of boredom. The gifted learn the basics of a field rapidly, and even the nuances in just a few years, and are then left looking for a new challenge.^{5,9,16} Luckily, medicine has many career paths offering endless possibilities, so finding additional challenges for the outstanding medical learner is always possible.

Outstanding learners often understand the essentials of a clinical situation and will look beyond the immediate encounter to ask insightful questions. It may be impossible for teachers to answer these questions based on their own knowledge and experience. Asking the learner to find the answer and report back will not be well received if it is perceived as a way of masking the teacher's lack of knowledge. It is best for a teacher to seek answers in collaboration with the learner.

Occasionally, an outstanding medical learner may outright challenge the knowledge and opinion of the educator. Taking a collaborative approach, rather than focusing on who is right and who is wrong, to learning is especially important in these situations. It is important for the educator to let the gifted learner know that they are willing to consider alternative opinions rather than getting defensive. This will model proper professional behavior for working with peers and consultants. It will also build respect between the learner and educator, which will hopefully lessen the number of future disagreements.

Medical education involves a fair amount of pedagogy because there is so much information, and so many skills, that every learner needs to master. This is frustrating for outstanding learners who find fulfillment

by exploring areas of interest to them, even if those interests are far from the prescribed curriculum. Outstanding learners should be encouraged to follow side paths with the understanding that they will still be expected to cover the prescribed materials thoroughly.

Specific Approaches and Examples

The key to maximizing the educational experience of outstanding medical learners is to routinely provide intellectual stimulation and challenges. Below are some specific examples of how to achieve this type of individualized learning experience. Table 3 summarizes these approaches.

Teach Beyond the Immediate Patient

Often, the outstanding learner will give a complete presentation, develop a thorough differential diagnosis, order appropriate tests, and initiate the therapy of choice. There may simply be nothing to add to the case. The outstanding learner, however, will not be satisfied with praise for having done a good job. The gifted adult wants to be challenged.

Going beyond the case at hand turns a clinical scenario that the learner grasps into a learning event. One easy way of going beyond the immediate patient is to ask the learner to consider an altered history. "Would it change your medication choice if this patient had diabetes?" or "What if this patient were 75 instead of 55?" are simple examples.

Ask the learner to come up with scenarios where the management plan would differ with questions like, "In what situation might that not be the best test?" or "In which group of patients might you be more aggressive?" Outstanding learners may still easily answer these variations but will appreciate being pushed and will recognize that an opportunity was not ignored.

Teach Patient Care Principles

Outstanding learners can know volumes about a given disease process, especially if they have had a chance to read or have seen it before. This may cause the teacher to feel unprepared and unable to offer much to the learner. However, teachers always have insights into a patient's problem, gained by years of experience, they can offer to even the most outstanding learner.¹⁷ Ask the outstanding learner what they think a new diagnosis means to a patient or his/her family. "How will your plan change this person's life?" By teaching experiential pieces of medicine that cannot be gained by reading or using logic alone, teachers can offer useful guidance to outstanding learners.

The outstanding, but inexperienced, learner may develop a wonderful care plan but may be unsuccessful at communicating it because the patient is resistant to therapy, because of hearing or vision problems, or simply because he or she is unsophisticated. Communicat-

Table 3

Summary of Specific Recommendations for Teaching Outstanding Medical Learners

<i>Recommendation</i>	<i>Description</i>
Teach beyond the immediate patient	Use clinical cases as starting points for building complex clinical scenarios that teach and challenge.
Teach patient care principles	Teach about aspects of medical care that must be learned through experience rather than didactic learning.
Invite the learner to educate others	Encourage further exploration in areas of interest and sharing the knowledge gained through talks or papers.
Encourage personal development	Encourage exploration into teaching, research, leadership positions, or other avenues where the learner can use and develop their talents.
Provide opportunities to work with other high achievers	Find appropriate mentors for the learner, if need be by using the "invisible college" and professional societies.

ing a plan under these circumstances takes experience. This may be especially difficult for gifted learners, who grasp new concepts so easily themselves that they may be intolerant of less-intelligent individuals.¹⁵ This is a critically important area of medicine in which teachers can help outstanding learners grow.

Challenge them to think about the larger problems of the health care system. "What effect will offering this expensive therapy have on the larger system? Is there an argument against this screening test?" The outstanding learner may have already thought seriously about these issues but may never have been asked to give an opinion. The brightest and most talented students need to be encouraged to think about the larger system because they may someday be in a leadership position, making important decisions.

Invite the Learner to Educate Others

Asking outstanding learners to teach can have several positive outcomes.⁵ The learners have their talent acknowledged and have the opportunity to explore a topic to a depth that will be intellectually satisfying, and others can learn from them. Asking outstanding learners to teach may encourage them to consider a career in education.

A learner could be asked to do something as simple as creating patient education handouts or something as involved as writing for publication. In between, a learner could give an informal talk to peers or grand rounds to an entire department. The opportunity to educate others can be a win-win adventure by exciting and challenging the learner while educating a group of medical providers in the process.

Encourage Personal Development

Outstanding learners have the potential to become outstanding teachers, researchers, policy makers, and

leaders.¹⁵ This potential is most likely to be realized if it is nurtured early in the learner's career by getting the learner involved with research, policy development, and leadership roles.

Because gifted adults are creative individuals, research represents a particularly rewarding outlet. The research process becomes a new skill set to master, and the research project a venue to practice newly acquired skills. Research allows the learner to prevent boredom by becoming an expert in a small corner of medical knowledge and exploring it in as much depth as desired.

Encourage outstanding learners to become active in local, state, or national professional organizations. Many organizations have board seats reserved for students and residents. This is a wonderful opportunity for outstanding learners to have an influence on an organization, practice leadership skills, and network with others within their profession.

Provide Opportunities to Work With Other High Achievers

Gifted adults may feel isolated from others around them.^{3,8,9,15} By interacting with other high-achieving individuals, gifted adults feel less isolated and see that it is acceptable to strive to achieve full potential. Teachers should ensure that outstanding learners are afforded the opportunity to work with other highly talented individuals. Having peers to interact with and more-experienced professionals willing to act as mentors will facilitate growth.^{4,18} Mentoring is one key to success in the lives of gifted individuals.⁶

Some departments may not have a suitable individual to act as a mentor. Teachers must then use the "invisible college"—letting other departments know that there is a highly talented learner in need of a mentor. Sometimes, mentors can be found by contacting authors who have

previously published in the learner's area of interest. Even if these individuals are not interested themselves, they may know someone in their field who will make a suitable mentor for the learner.

These mentors do not need to be within the same specialty or even within medicine; there may even be some benefit to them being exposed to other professional fields. Building peer and mentoring relationships is another benefit to encouraging the outstanding learner to become active in professional societies. Talented and energetic individuals tend to congregate in these organizations and act as a natural peer group.

Conclusions

Outstanding medical learners are likely to belong to a group professional educators call "gifted adults." These individuals have a well-defined set of characteristics that set them apart from other learners. They have enormous potential for success within medicine, but there are educational pitfalls that the gifted, and their educators, may encounter. Medical educators should understand the characteristics of gifted adults and develop an individualized educational curriculum for them. This will allow gifted learners to be continuously challenged and maximize what they learn in their years of training.

Acknowledgments: We would like to thank the many medical educators who offered thoughts and opinions on this topic. In particular, we would like to thank Robert Oh, MD, for his suggestions and David Irby, MD, for his insights and review of the manuscript.

The opinions or assertions contained herein are the private views of the authors and are not to be construed as official or as reflecting the views of the Department of Defense.

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